Three new species of *Stevia* (Asteraceae: Eupatorieae) from northern Mexico

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ABSTRACT

Three new taxa of **Stevia** are described: two from northwestern Mexico, **S. puricana** B.L. Turner, **sp. nov.** and **S. porphyreoides** Yahara & Soejima, **sp. nov**. and **S. zaragozana** B.L. Turner, **sp. nov.** from southern Nuevo Leon. The former two taxa relate to *S. porphyria*, the latter to the recently described *S. viejoana* Soejima et al. Photographs of the types and distribution maps are provided. Published on-line **www.phytologia.org** *Phytologia 97(1): 25-31 (Jan 2, 2015).* ISSN 030319430.

KEY WORDS: Asteraceae, Eupatorieae, *Stevia, S. porphyria, S. viejoana*, Mexico, Sonora, Chihuahua, Nuevo Leon

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Stevia is a relatively uniform large genus of the more tropical regions of the Americas with 100 or more species occurring in Mexico, many of these localized endemics (Grashoff 1972; Soejima, Yahara and Watanabe 2001; Watanabe, Yahara, Soejima and Itos 2001; Turner 1997; Turner 2013a; Turner 2013b). The present account adds an additional three species to the list.

STEVIA PURICANA B.L. Turner, **sp. nov. Fig. 1.**

Stiffly erect, perennial herbs, 50-70 cm high, mostly unbranched. **Stems** pubescent with crinkly hairs 0.5-1.0 mm high. **Leaves** alternate, 2-5 cm long, 0.3-1.0 cm wide; petioles obscure, passing into the blades; blades linear-obovate to ovate, sparsely pubescent and glandular punctate on both surfaces, the margins weakly dentate. **Capitulescence** a terminal, corymbose-panicle, 4-8 cm across, 4-6 cm high, the ultimate peduncles 1-6 mm long. **Heads** mostly 8-10 mm long; involucral bracts linear-lanceolate, 5-6 mm long, sparsely pubescent with acute apices. **Corollas** mostly purple, 5-6 mm long; tubes passing into the throats; lobes ovate, pubescent, white beneath, ca 1.5 mm long. **Achenes** black, ca 4 mm long, sparsely pubescent apically; adelphocarps with 2-3 stout, yellowish, slender, apically ciliate, scales 3-4 mm long, between these 1-2 membranous scales ca 1 mm long; idiocarps with membranous scales ca 1 mm long.

TYPE: **MEXICO. SONORA: Mpio. de Nacozari de Garcia,** "Antennas on top of Sierra la Purica, 19.1 km (by air) NNW of Nacozari, Reserva Forestal Nacional y Refugio de Fauna Silvestre Ajos-Bavispe, 2467 m, 30 32 39 N, 108 54 55 W, pine forests, 9 Sep 2013, *A.L. Reina-G.* et al *2013-320* (Holotype: TEX). **Map 1**

ADDITIONAL SPECIMEN EXAMINED: Same locality and date: *Reina-G.* et al *2013-408* (TEX).

Named for the Sierra Purica, Sonora, whence the type. According to Google, the upper portions of the Sierra Purica are dominated by *Pinus arizonica* and *P. engelmannii*.

In my treatment of **Stevia** for Mexico, this novelty will key to or near **S. porphyria** McVaugh, a widespread variable species of central Mexico. It differs from the latter in having smaller heads, smaller involucres and achenes with stout, sclerotic, pappus scales; it might also be compared with the newly proposed **S. porphyreoides**, the latter possessing similar sized heads, but readily recognized by its slender pappus bristles.

The following key will choose among them:

1. Heads mostly 10-12 mm long; phyllaries mostly 6.5-8.0 mm long; corolla lobes oblong–elliptic; central and north-central Mexico .....**S. porphyria**
1. Heads mostly 8-10 mm long; phyllaries mostly 5-7 mm long; corolla lobes linear to narrowly ovate; northwestern Mexico...(**2**)

2. Achenes bearing capillary bristles; corolla lobes more nearly linear; membranous scales ca 0.6 mm long; Chi, Dur and n Jal.....**S. porphyreoides**
2. Achenes bearing sclerotic awns or scales, bristles absent; membranous scales ca 1 mm long; corolla lobes ovate; Sierra Purica, ne Sonora.....**S. puricana**

STEVIA PORPHYREOIDES Yahara and Soejima, **sp. nov. Fig. 2**

Stiffly erect rhizomatous perennial herbs, mostly unbranched, 50-80 cm high. **Stems** pubescent with crinkly hairs, 0.5-1.0 mm high. **Leaves** mostly alternate, sessile, 2.0-3.5 cm long, 0.4-0.8 mm wide; glandular punctate on both surfaces, weakly crenate. **Capitulescence** a terminal corymbose panicle up to 8 cm across, the ultimate peduncles 1-6 mm long. **Heads** 8-9 mm long; involucres 5-7 mm long, the apices acute. **Corollas** deep purple, sparsely pubescent, tube plus throat 4-5 mm long; lobes linear, 1.0-1.2 mm long. **Achenes** heteromorphic, ca 3 mm long, aristate, sparsely hispid; pappus of adelphocarps having 2-3 slender awns, 5-6 mm long, the membranous scales ca 0.6 mm long; that of the idiocarp a crown of united scales ca 0.6 mm high.

TYPE: **MEXICO. DURANGO: Mpio. de El Mezquital,** "22 Km al NE de Los Charcos." 2750 m, 1 Nov 1982, pine-oak woodlands, *S. Gonzalez & J. Rzedowski 2356* (Holotype: TEX). **Map 1**

ADDITIONAL SPECIMENS EXAMINED: **MEXICO. CHIHUAHUA**: near Colonia Garcia, 7500 ft, 7 Sep 1899, *Townsend & Barber 310* (TEX). **DURANGO:** "Rancho La Pena (el Bebedero), Suchil." Oak forests, 7 Oct 1882, *Gonzalez E. 1110* (TEX). **JALISCO:** "ca 8-10 km SE of El Mortero, near Mezquitic, on Zacatecas-Jalisco border, along the road to Monte Escobedo, Zacatecas," 2450 m, 5 Nov 1963, *Feddema 2457* (TEX).

McVaugh (1984) did not cite the *Feddema* collection noted above, but Grashoff annotated a duplicate sheet (TEX) as "*S. porphyrea* JCG 1972." Indeed, McVaugh, in his Flora Nova-Galiciana acknowledges but a single collection of the latter from Jalisco (SW of Ojuelos; *McVaugh 16582*), this close to the area from whence the Type (Aguacalientes), as indicated in Map 1.

Yahara and Soejima sent me an advanced copy of their manuscript, "Two new species of *Stevia* from Mexico," for review. This I rendered, but the authors chose not to describe the novelty concerned, perhaps because I questioned its validity, largely based upon the Grashoff collection cited above, Grashoff being my Academic Son, this creating a bias.

Description of my proposed **Stevia puricana** has made me reexamine the **S. porphyria** complex, based upon specimens on file at TEX, and I conclude that **S. porphyreoides**, as proposed by Yahara and Soejima, has nomenclatural merit, although, morphologically, very close to **S. porphyria.** According to its authors, **S. porphyreoides** produces "abundant" pollen grains and is "considered to be sexual [as opposed to apomictic]."

It should also be noted that the joint authors questioned the *Townsend & Barber* collection from nw Chi, with the observation that it differs from typical **S. porphyreoides** in having "4 adelphocarps of 1 awn, a higher crown of united scales of the idiocarp (ca. 0.9 mm high) and densely sessile-glandular florets." I have included it herein largely on its overall gestalt, but it could possibly prove to be novel, considering the characters concerned, and its geographic isolation from the more southern populations (cf Map 1).

STEVIA ZARAGOZANA B.L. Turner, **sp. nov. Fig. 3.**

Perennial herbs to 25 cm high. **Mid-stems** markedly pubescent with crinkly hairs 0.5-1.0 high. **Leaves** (mid-stem) 2-3 cm long, 1-2 cm wide; petioles 2-4 mm long, passing into the blades; blades ovate, widest near the middle, sparsely pubescent above and below, 3-nervate from or near the base, the margins serrulate. **Capitulescence** a terminal array of congested heads, collectively 6-7 cm across, ca 10 cm high; heads 0.5-2.0 cm across and as high, the ultimate peduncles sessile, or nearly so. **Involucres** mostly 8-9 mm long, glabrous, or nearly so, their apices sharply acute. **Corollas,** purple, glabrous or nearly so; tube ca 1.5 mm long, passing into the throat; lobes ovate, ca 1.5 mm long. **Achenes** ca 4 mm long, black, wingless, glabrous; pappus a crown of lacerate scales ca 0.5 mm high.

TYPE: **MEXICO. NUEVO LEON: Mpio. Zaragozana,** "Canada La Tinaja, between Rancho La Encantada and Cerro La Pena." 2600-2700 m, 23 56 N, 99 49 W, 3 Jul 1988, "Pine-oak-madrono association on northern exposure." *T. F. Patterson 5787* (Holotype: TEX). **Map 2**

In my treatment of **Stevia** for Mexico (Turner 1997), this novelty will key directly to **S. hintoniorum** B.L. Turner; it is readily distinguished from that taxon by a number of characters, including habit, leaf shape, etc. It might also be compared with the recently described **S. viejoana** (Soejima et al 2001), this also occurring in Mpio. Zaragozana (Map 2), the latter differing in having lanceolate to oblong-lanceolate leaves, the upper stems stipitate-glandular, involucres smaller (ca 5 mm high vs 8-9 mm) and glabrous achenes.

Named for the Mpio. Zaragozana, whence the Type.

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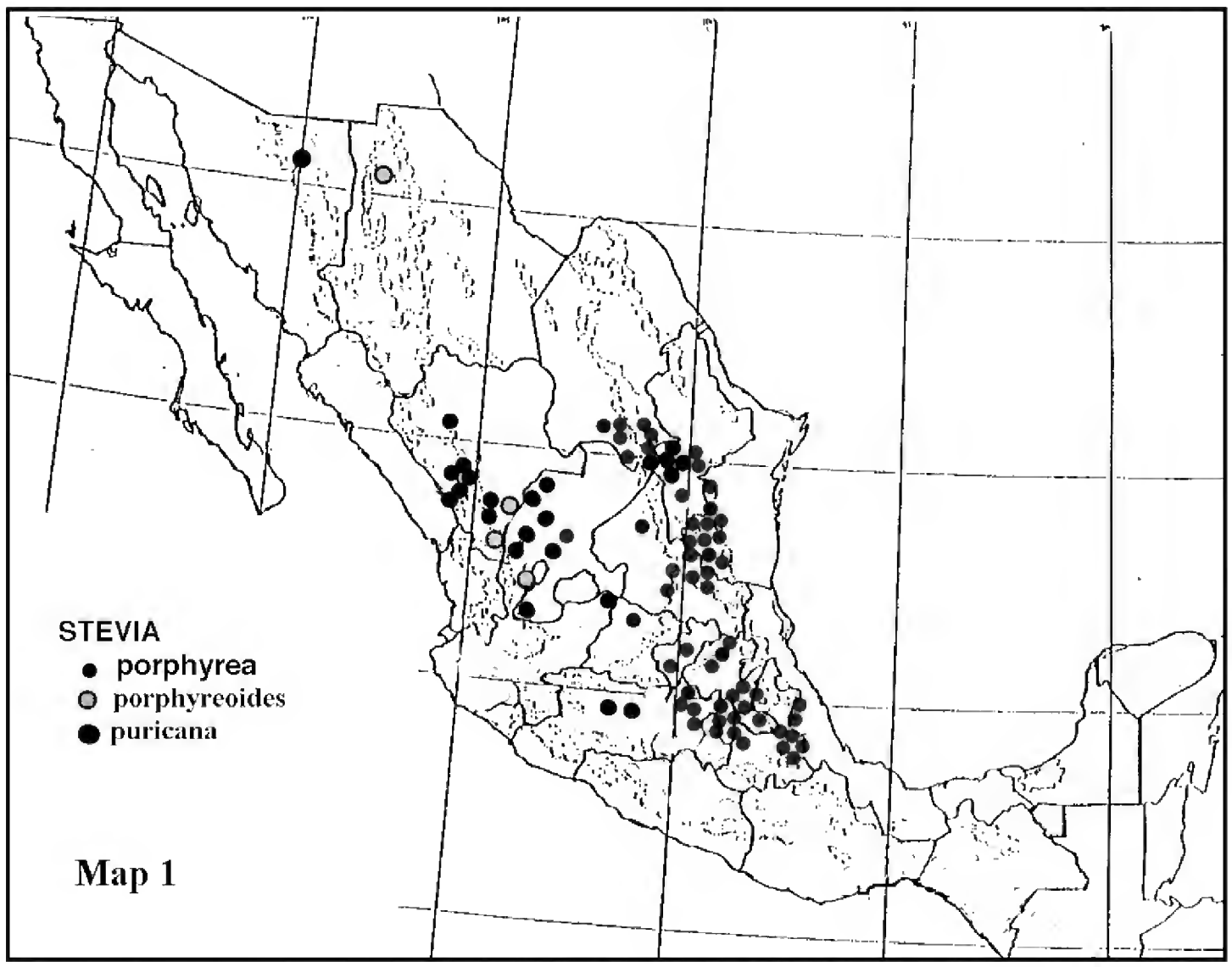
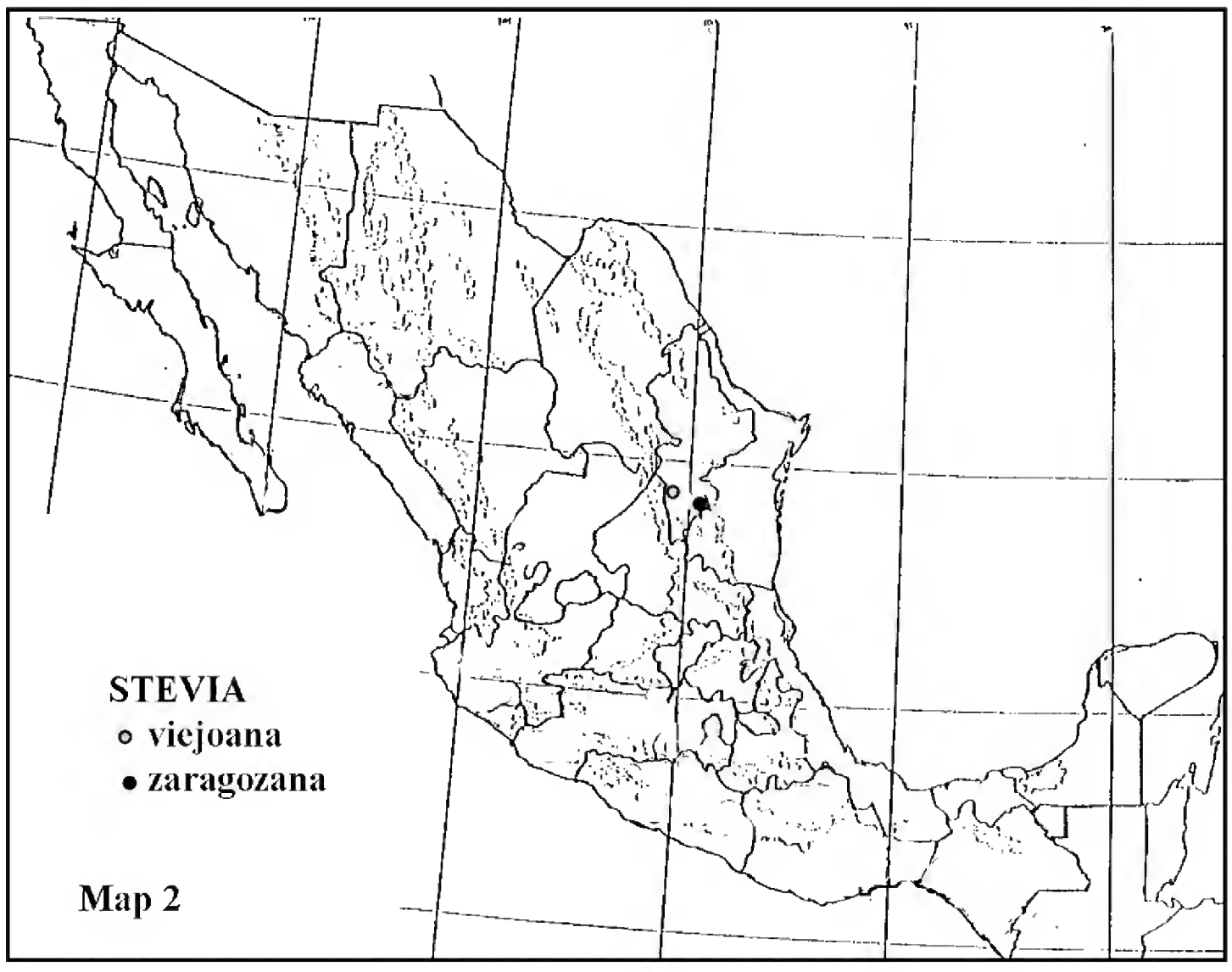

STEVIA
porphyrea
porphyreoides
puricana

Map 1


STEVIA
viejoana
zaragozana

Map 2

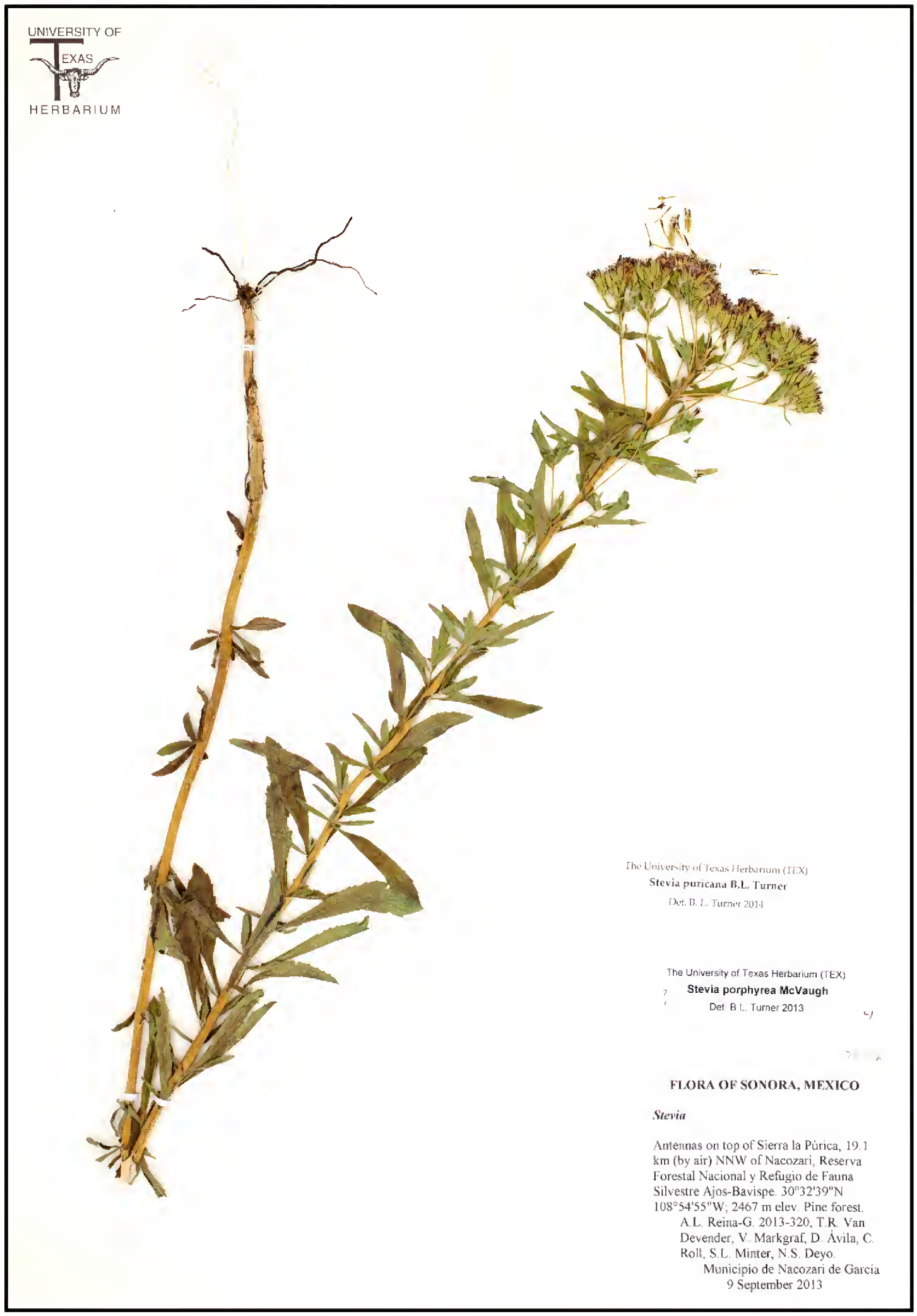


Figure 1. *Stevia puricana.*

Figure 2. *Stevia porphyreoides.*

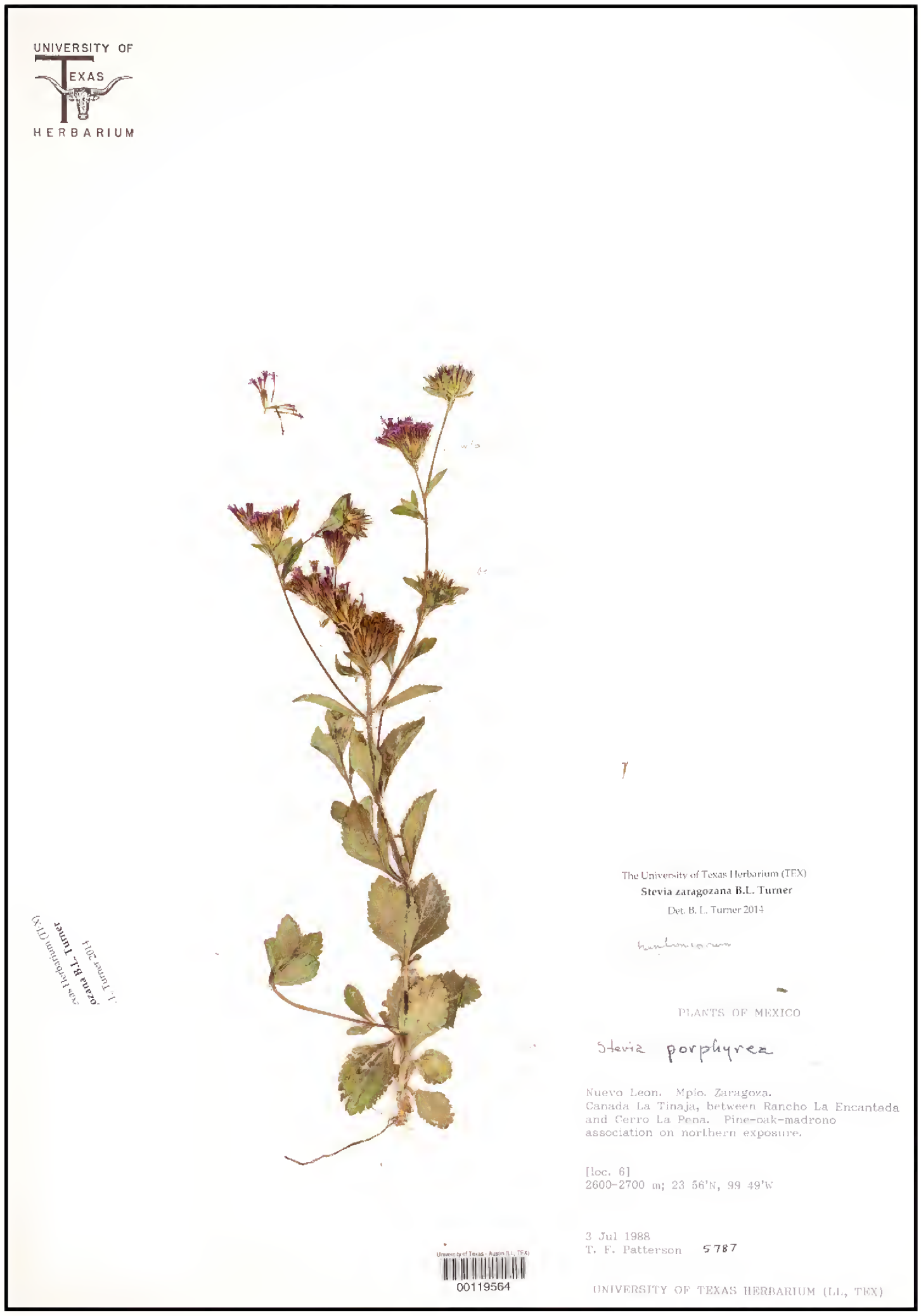


Figure 3. *Stevia zaragozana.*